

# DMSO

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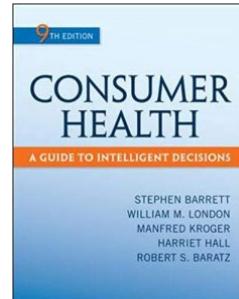
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DMSO (dimethyl sulfoxide) is derived from lignin, the binding substance of trees. The Crown Zellerbach Corporation, a mammoth lumber company, holds a number of patents on DMSO for use as an industrial solvent or liniment for treating pain in horses. Crown Zellerbach licenses DMSO exclusively to Research Industries of Salt Lake City for marketing as a drug called Rimso-50. Topically-applied DMSO has the unusual ability to act as a "chemical hypodermic needle" which is to say that it is rapidly absorbed through the skin and can take with it other substances that ordinarily would not cross the skin's barrier. Topically-applied DMSO produces a garlic-like taste in the mouth and a breath odor. Topical use can cause a rash, blistering, itching, hives, and skin thickening. Intravenous use can cause kidney damage and other adverse side effects.

DMSO was approved by the FDA in 1978 for only one purpose, the treatment of a rare bladder disorder, interstitial cystitis. However, scandal surrounded the FDA's approval of DMSO and some still believe that a cloud hangs over it. Stanley Jacob, MD, served as an supposedly unbiased medical monitor of DMSO between 1974 and 1979, but for three of those years (1974, 1978, and 1979), he was on the Research Industries board of directors. In addition to getting consulting and director's fees, Jacob is said to have bought 50,000 shares of the company's stocks. The medical officer charged with reviewing data from clinical trials of DMSO, K.C. Pani, accepted \$36,500 in gratuities from Dr. Jacob during the time. A detailed account of the dubious FDA approval of DMSO is provided by Howard Rosenberg in "The DMSO Affair." [1]

DMSO became a darling among the promoters of quackery after CBS-TV's *60 Minutes* portrayed the substance as a medical breakthrough [2]. Some arthritis sufferers testified that DMSO had provided relief. The Arthritis Foundation says that DMSO can act as a liniment with a counter-irritating effect temporarily relieving pain, but it does not reduce inflammation as do truly effective arthritis remedies (Arthritis Foundation, undated). A detailed Public Information Memo was issued to the Chapter Executive Directors of the Arthritis Foundation on November 13, 1981, following the publication of a popular trade book.

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Mildred Miller, owner/administrator of the Degenerative Disease Medical Center in Las Vegas, Nevada, promoted DMSO for a variety of disorders including arthritis, mental illness, emphysema, and cancer. Miller wrote a book touting DMSO entitled *A Little Dab Will Do Ya!* (Quality Advertising, 1981). Miller also published *Preventive Health News*, a tabloid-sized newsletter in which she promoted DMSO and carried on a harangue against the establishment (Miller published another book with the disrespectful title *Up Yours FDA*). Miller was eventually convicted of Medicare fraud and went to prison [2]. The American Cancer Society issued a statement advising against the use of DMSO for cancer [3].

During its heyday, black market DMSO could be purchased in health food stores, military surplus stores, hardware stores, at swap meet booths, or even from vendors working out of the trunks of their cars parked along highways. Very often black market DMSO is industrial grade, not medical grade. A problem with industrial grade DMSO is that companies bottling the substance as an industrial solvent use the same equipment to bottle other substances. Residual toxic materials can contaminate industrial grade DMSO and may be taken into the body by DMSO's action as a "chemical hypodermic."

Because of DMSO's dangers and legal status, the FDA has had a running battle with DMSO distributors. In 1980, the agency discussed the controversy surrounding the drug in the *FDA Consumer* [4]. In 1982, the agency reported on actions taken against companies distributing DMSO in the Pacific Northwest [5]. A book touting DMSO, *The Persecuted Drug: The Story of DMSO*, by Pat McGrady became the subject of legal action by the FDA. A New York company, DMSO, Inc., was repackaging industrial grade DMSO and selling it for self-medication. The company also was selling copies of the McGrady book. The FDA held that this made the book an extension of the label. The ruckus that followed included intervention by the New York American Civil Liberties Union on behalf of McGrady's widow, who was profiting from the book's sales, charging that the FDA's action violated the First Amendment's free speech guarantees. The case ran out of steam when the FDA changed its policy on seizing books that are used to directly promote questionable products or health practices.

DMSO received more attention in 1994 in the mysterious toxic fumes poisoning of emergency room doctors at Riverside General Hospital (California) as they attempted to treat cancer patient Gloria Ramirez. It was theorized by scientists at Lawrence Livermore National Laboratories that a chemical reaction occurred between DMSO and oxygen administered during ambulance transportation creating DMSO<sub>2</sub>, and that the DMSO<sub>2</sub> was further oxidized to DMSO<sub>4</sub> – a lethal gas [6]. This theory has not been proven, and may always be controversial because its

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veracity affects the outcome of litigation on the case. The possibility that a quack cancer remedy was responsible for this medical mystery is intriguing. DMSO continues to be used by a number of quack cancer clinics in Mexico, the Bahamas, and the United States.

NCAHF advises extreme caution when it comes to using DMSO for any medical condition. First, be certain that the product you are using is medical grade, not industrial grade. Second, beware of excessive claims from the substance. Lastly, avoid overly enthusiastic lay people and fringe medical professionals who create high expectations from using DMSO. Be aware that DMSO has potentially adverse side effects and offers little in the way of medical value.

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